

Many lattice triangles are formed in an  $(N \times N)$  grid, but not all of them are Pythagorean (Right angled) triangles. Given the value of  $N$  your job is to write a program that produces the number of lattice triangles in an  $(N \times N)$  grid. A lattice triangle is triangle whose three vertices are lattice points. A lattice point in two dimensional Cartesian coordinate system is a point whose abscissa and ordinate are integers.

## Input

The input file contains at most 15 lines of inputs. Each line contains an integer  $N$  ( $0 < N < 2001$ ). Input is terminated by a line containing a single zero. This line should not be processed.

## Output

For each value of  $N$  produce one line of output which contains an integer  $T$ . Here  $T$  denotes the total number of right angled triangles in that  $(N \times N)$  grid.

## Sample Input

```
10
20
30
0
```

## Sample Output

```
23596
418716
2288304
```